

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

11-23-2018

Adoption of Integrated Library Management Software(NewGenLib): The Experience of Kano University of Science and Technology Library, Wudil, Kano State

Sunday Olabisi Olatunji

University of Ibadan, dcataloger@gmail.com

Binta L. Farouq Dr

Bayero University,Kano, bfladan@yahoo.com

Mustapha Idris Mr

Kano University of Science and Technology,Wudil,Kano, Mustyidris72@gmail.com

Follow this and additional works at: <http://digitalcommons.unl.edu/libphilprac>



Part of the [Cataloging and Metadata Commons](#)

Olatunji, Sunday Olabisi; Farouq, Binta L. Dr; and Idris, Mustapha Mr, "Adoption of Integrated Library Management Software(NewGenLib): The Experience of Kano University of Science and Technology Library, Wudil, Kano State" (2018). *Library Philosophy and Practice (e-journal)*. 2140.

<http://digitalcommons.unl.edu/libphilprac/2140>

**ADOPTION OF INTEGRATED LIBRARY MANAGEMENT SOFTWARE
(NEWGEBLIB): THE EXPERIENCE OF KANO UNIVERSITY OF SCIENCE AND
TECHNOLOGY LIBRARY, WUDIL, KANO STATE**

¹Binta L. FAROUQ ²Olabisi OLATUNJI ³Mustapha IDRIS

**KANO UNIVERSITY OF SCIENCE AND TECHNOLOGY LIBRARY, WUDIL, KANO
STATE**

**¹Email: bfladan@yahoo.com +2348067770594 ²Email: dcataloger@gmail.com
+2348132937526 ³Email: mustyidris72@gmail.com +_2348062108389**

ABSTRACT

Adoption of library automation software is imperative. In the changing phase of the information sector, Open Source Integrated Library System is gaining more significance across the world for various factors such as availability of source code, flexibility, cost benefit, better quality control, self-customization and community support. The main objective of this paper is to examine the experience of KUST Library in the adoption of NEWGEN Library Management Open Source Software (OSS).

The methodology adopted was a survey design, data was collected using questionnaire. The questionnaires were administered to 5 staff of the library in the cataloguing units. The participants were limited to the cataloguing unit because it was observed that the software is presently in use in only the cataloguing unit of the library

Findings show that the main reasons for the adoption of NewGenLib ILMS by KUST library were: provision of on-the-spot access to information, proper organization of information resources, accurate charging and discharging process, up to date statistical records, evaluation of information resources, linkage to all the faculty libraries for efficient management and adequate services to the users and resource sharing. ICT facilities available in the adoption of NewGenLib Software in KUST library include: server, computers, barcode printer, barcode label, camera, battery, computer printers, internet, barcode reader, UPS and photocopy machine. While scanning machine, inverter, projector are not available.

The major challenges faced in the adoption of NewGenLib ILMS in KUST library are: erratic power supply, insufficient manpower, inadequate training and technical support, lack of participation, inability to modify some of the fields, accession number field not available on the interface where other fields are, scalability and speed, lack of supervision, lack of motivation.

Based on the findings, the University management should create an avenue where all the staff will be actively involved in the adoption of the NewGenLib Integrated Library Management Software; they should also organize a workshop where the staff can be trained about the various modules of the software. The University library hopes to adopt the software to the services of other departments in the library after concluding the data entry process.

Keywords: Integrated Library System Software, Automation, NewGenLib, ICT, Open Source Software

INTRODUCTION

The pursuit for excellence in all aspects of a university educational system made it imperative for universities around the world to rise up to their responsibilities. If a librarian is to deliver prompt and adequate services to the clients, he/she must adapt to the changing environment and the use of current software to manage library routine activities. Information and communication technology (ICT) brought a lot of challenging issues to all facets of the university system and the library is not an exemption.

According to the fifth law of Ranganathan which says “Library is a growing organism”, it is expected of a library to grow in all facets. The ancient methods of maintaining this assumption is no longer dynamic and efficient. For expeditious retrieval and dissemination of information and better service for the clientele, application of modern techniques has become absolutely indispensable. This assertion brought about the need for automating the library services. According to Hazarika (2017) Library automation is the application of Information and Communication Technologies (ICTs) in library operations and services. Bhardwaj and Sukla (2000) library automation is generic term used to denote the various activities with an improving quality of products and services of library and information centers. It enhances the speed, productivity, adequacy and efficiency of the library professional staff and save the manpower to avoid some routine, repetitive and clerical tasks such as filing, sorting, typing, duplication checking etc. Automating a library is a unique decision that makes the library activities easy for prompt service delivery to the users. Every client expects quick response to requests as well as easy access to information.

Automating a library is beyond having a running Online Public Access Catalogue (OPAC) that assist users in searching for information materials available in the library. Automation should be a holistic concept and in doing this there is a need for having a fully integrated library system that will have modules for the various library services.

An integrated library system (ILS), also known as a library management system (LMS), is an enterprise resource planning system for a library, used to track items owned, orders made, bills paid, and patrons who have borrowed. An ILS usually comprises a relational database, software to interact with that database, and two graphical user interfaces (one for patrons, one for staff). Most integrated library separate software functions into discrete programs called modules, each of them integrated with a unified interface. Muller (2011) stated that “integrated library systems (ILS) are multifunction, adaptable software applications that allow libraries to manage, catalog and circulate

their materials to patrons”. In choosing ILS software, libraries must base their decision not only on the performance and efficiency of the system, but also on its fundamental flexibility to readily adapt to the future demands and needs of their patrons. There are different types of integrated library software used by libraries in Nigeria. Experience has shown that very many libraries in Nigeria run into one problem or the other due to the wrong choice of library software. Obajemu, Osagie, Akinade, and Ekere (2013) stated that “some of the first generation universities in Nigeria started with TINLIB software but they could not continue due to some technical difficulties, maintenance problem, poor revision policy and the prohibitive cost of processing and maintaining it”.

Integrated Library Software can either be Proprietary (source codes are not free) or Open Source (source codes are free) but the study will focus on open source since NewGenLib is an example of open source software.

Open-source is software that is both free software and open source. It is liberally licensed to grant users the right to use, copy, study, change, and improve its design through the availability of its source code rather than its cost. This approach has gained both momentum and acceptance as the potential benefits have been increasingly recognised by both individuals and corporations as free software. There have been different studies on the use and benefits of Open Source Software (OSS) on the activities of libraries.

Forrester (2007) undertook an in-depth study of how open source software is being used in North America and Europe to understand its role in IT and examine the barriers and benefits that open source software represents to enterprise customers. Among the concerns, the biggest concern was to find ‘technical support’. The survey revealed respondents’ perceptions as: OS provide significant economical and technological benefits including cost savings, improving overall efficiency of IT, quality of products and processes, greater innovation, increased competition among service offerings, and more efficient use of resources across the industry.

Hanumappa, A., Dora, M. and Navik, V. (2014) explore the Open Source Software used in some selected India libraries to review the existing automation software i.e. ILMS (Integrated Library Management System) and DL (Digital Library) software. The study shows the availability of OSS like Koha and NewGenLib in the ILMS category and Dspace, Greenstone and Eprints in the DL software category in Indian. NewGenLib is an example of an open source software which is the focus of this study. There is a very little research on the adoption of NewGenLib software because most libraries are not using it. In a survey carried out on the use of Newgenlib Open

Source Software in Saiyid Hamid Library (Central Library) in Maulana Azad National Urdu University(Manuu). Findings show that MANUU Library has been able to provide Web-OPAC from its webpage where users can access live database between the hours of 9: 30 A.M. to 6 P.M. every day. They can also check their circulation status and also reserve the item through the webpage by entering their Unique ID and Password. All these were made possible through the adoption of NewGenLib.

Osaniyi (2010) opine that several library management software has thrived with much patronage, most of the software have failed resulting to waste of time, fund, and energy. It is on this premise that this paper wishes to discuss the adoption and implementation of an open source integrated management software which is NewGenLib in Kano University of Science and Technology Library.

OBJECTIVES OF THE STUDY

The main objective of this paper is to examine the experience of KUST Library in the adoption of NewGenLib Library Management Open Source Software (OSS). The specific objectives are to:

- 1 enumerate the reasons for the adoption of NewGenLib Library Management Open Source Software (OSS) in the operations of KUST Library;
- 2 examine the ICT facilities put in place in KUST library for the adoption of NewGenLib software;
- 3 challenges faced in the adoption of NewGenLib software;
- 4 suggest strategies for successful adoption of the automation project of the library using the NewGenLib.

RESEARCH QUESTIONS

1. What are the reasons for the adoption of NewGenLib Library Management Open Source Software (OSS) in the operations of KUST Library?
2. What are the I.C.T facilities put in place in KUST library for the adoption of NewGenLib software?
3. What are the challenges encountered with the adoption of NewGenLib software?
4. What are the possible strategies to solve these problems?

NEWGENLIB SOFTWARE

Integrated library management software is designed to enhance all library routine activities as expected by the library users. A good and reliable ILS enhances management, control and easy access to information resources that are physical in a library and outside, for example, books, CD ROM, e-journal, e-books, e-databases, repositories, among others. It also helps to reduce time wastage in the delivery of services to the library users. NewGenLib is an open source integrated library software(OSILS) that was designed to enhance library services. It is launched as open source during 2005, the latest version of which is 2.0. According to the software homepage (<http://www.verussolutions.biz/web/node/18>) “it is the result of collaboration between domain specialists in library automation and software specialists.” The Kesavan Institute of Information and Knowledge Management (KIIKM), a professional body at Hyderabad has provided the said domain knowledge. The software development expertise has come from a company called Verus Solutions Pvt. Ltd. A Memorandum of Understanding of above mentioned organizations has been signed to keep the product up to date both by domain specialists and software professionals’. It has capability to create fully automated library. Its download count as on 23 March 2008 is 5172.

On the issue of compatibility with MARC21, a study was conducted in India and most libraries claimed that NewGenLib is not compatible with MARC21. However, very few of them are properly able to map MARC fields in their data structure. Prior study has shown that NewGenLib is fully MARC 21 compatible (Mukhopadhyaya, 2009).

SALIENT FEATURES OF NewGenLib OPEN SOURCE SOFTWARE

1. **Licencing:** It is open source under the most widely used open source software licensing system called GPL (General Public License).
2. **Source Code & User Manual:** The open source binaries and source code can be downloaded. Installation notes for Linux and Windows are also available at the site. The user manual is also downloadable.
3. **User’s Feedback:** The users of the software can post their feedback with views, problems, solutions, discussions, etc to the organization.
4. **Architecture & Backend:** It is web-based and has a multi-tier architecture; it uses Java (a swing-based librarian's Graphical User Interface) the JBoss (J2EE-based Application Server) and PostgreSQL as default backend.

5. **Functional Modules:** NewGenLib's functional modules are: Acquisitions management (monographs and serials); technical processing; circulation control; system configuration; a desktop reports application and an end-of-day process (scheduler) application.
6. **Data Create & Exchange Format:** NewGenLib open source is compliant with Machine Readable Catalogue (MARC-21) format. It has a MARC editor. It allows seamless bibliographic and authority data import into cataloguing templates.
7. **Mail Server:** SMTP mail servers can be configured for emails that can be sent from functional modules.
8. **Open Access Compatibility:** NewGenLib open source allows creation of institutional open access (OA) repositories compliant with the Open Access Initiative
9. **Unicode Compatibility:** NewGenLib open source is Unicode 3.0 compliant.
10. **Radio-frequency identification (RFID) Technology:** It is RFID ready.

ADVANTAGES OF NewGenLib AS OPEN SOURCE SOFTWARE

The advantages of NewGenLib open source may be perceived as follows in the light of the advantages of open source software as pointed out by Richard (2008):

- 1 **Ability to tailor to fit local needs:** The availability of the source code means that a user can modify and enhance the software to more closely fit its own needs. Unlike with proprietary products, the user, not a vendor, sets the development priorities. The user is also able to set its own priorities for bug fixes.
- 2 **No restriction on use:** unlike commercial software, there are any contractual restrictions on how the software is used. While some developers use the GNU General Public License that assures users that they have the right to distribution and those to whom they distribute also have the right to modify and distribute, other developers merely declare that their software is in the public domain. A subsequent user may, therefore, decide to protect the enhancements that it makes by copyrighting them.
- 3 **Low cost:** There is no charge for the software; therefore, the capital outlay required by commercial software is avoided. The major costs are ongoing development and maintenance. If the number of users is large, and they share their efforts, each user's cost is reduced. However, if the number is small or a user does a lot of tailoring to fit unique local needs that are not shared by other users, the cost can escalate.

However, some of the disadvantage of this type of open source software are: lack of coordination, inadequate training and technical support, lack of participation, lack of guarantees

and remedies, scalability and speed etc. However, the developer of the NewGenLib open source is expected to solve these disadvantages. The open source software may not offer the scalability and speed of proprietary software because the easy-to-use and general-purpose programming languages used are not very scalable and are slower than other languages. But NewGenLib open source has overcome this problem. On the other hand the Versus Solution Pvt. Ltd organizes workshop and training programmes for appropriate support.

THE KANO UNIVERSITY OF SCIENCE AND TECHNOLOGY LIBRARY EXPERIENCE

The Kano University of Science and Technology (KUST) Library was established in April 2001, to support the then six undergraduate programmes of the university, domiciled in two Faculties namely; Faculty of Agriculture and Agricultural Technology (FAAT) and; the Faculty of Science and Science Education (FASSE). The Library was then housed in the former Student's Dining Hall of the former Wudil Teachers College, with a modest collection of about 2000 volumes of books and 525 volumes of journals and other documents.

However, the University has, in the last ten years, grown from two faculties to seven faculties, twenty seven departments, Postgraduate School (PG), Entrepreneurship Development Centre, Centre for Continuing and Innovative Education (CCIE), and the Division of Agricultural Colleges (KUSTDARC) among others. The population of both staff and students has also grown very rapidly over the years.

Accordingly, the library has expanded in conformity with the general expansions of the University, particularly from 2014-2016. It is now made up of the main library, six (6) Faculty Libraries and over 20 Departmental Libraries as well as an Electronic (E-Library) facility equipped with over two hundred and fifty 250 fully networked computers. The e-library stores and provides access to both on-line and off-line resources to the university community. For instance, the library subscribes to electronic databases like EBSCO, Science Direct, EGRANARY, TEEAL, Nigerian Virtual Library to mention a few.

Today, the holdings of the University Library is approximately, 18,843 volumes of books and 20,301 volumes of periodicals/Journals, spread across all the 27 programmes of the university and related areas. At the moment the library has a staff strength of ten (9) Academic Librarians; sixteen (16) Para-professionals; and twelve (12) other support/administrative staff.

With the growing number of collections for the various courses floated in the University at both undergraduate and postgraduate levels, coupled with the corresponding growth in the size of

the collection as well as faculty departmental libraries, it was inevitable to use a software that will provide on-the-spot access to information, proper organization of information resources, accurate charging and discharging process, up to date statistical records, evaluation of information resources as well as linkage to all the libraries for efficient management and adequate services to the users. Therefore, in 2016, the KUST Library adopted the NewGenLib. OSS to enhance easy access to the resources and services of the university library.

The NewGenLib (OSS) is an integrated library management system developed by Verus Solutions Pvt. Ltd. Domain expertise is provided by Kesavan Institute of Information and Knowledge Management in Hyderabad , India. NewGenLib version 1.0 was released in March 2005. On 9 January 2008, NewGenLib was declared Open Source Software under GNU GPL. The latest version is NewGenLib 3.0.4 R3 released on 14 February 2014. NewGenLib is further described as a fully web based integrated library management software that runs on distributed computers through a network or server. It can also run on local area networks without access to the Internet, although some of the advantages of using it via the web will be lost. It uses a number of well supported and widely-used, reliable and well tested open source components like PostgreSQL, Apache Tomcat, and SolrLucene. NewGenLib is entirely Java-based, platform neutral.... (Giri, 2015)

The choice of the software was based on the need to automate the routine library activities and services including acquisition, cataloguing, circulation and serials control in order to serve the teeming users effectively. Experiences gathered at workshops, seminars as well as the desire for less costly but quality technology solutions that can help the library to serve their users effectively led to the decision to acquire the software.

After an extensive evaluation and analysis by senior staff of the university library constituting members of the ICT Committee under the leadership of the HOD Automation recommended the adoption of the NewGenLib. Availability of features suitable for a university library like ours and active development due to its strong community world over were the main factors that made the adoption of the OSS by the library.

The latest version of NewGenLib 3.0.4 R3 was configured and installed in June,2016. The software has all relevant modules to manage library routine activities for effective service delivery to the library users. It is user friendly and internet compliant which allow users to interact with the OPAC within and outside the university campus. The software enhances access to the copious

electronic information resources and e-books on the internet since the user's interface (OPAC) supports upload of important links that enhances users' research beyond the system.

The KUST Library has implemented its automation project using the NewGenLib OSS with a relatively low cost. The library has utilized maximum in house manpower for the project. Through the services of an IT company, the NewGenLib server was successfully installed and configured.

Equipment provided/ Deployed for the KUST NewGenLib

OSS

Hardware

1. A server with specification HP ML 350 server.....
2. Computers
(Client PCs or Workstations for library staff)
 - 2Pcs for Technical Processing Section
 - 1Pcs for Acquisition
 - 2Pcs for Circulation
 - 2Pcs for On-line Public Access Catalogue (OPAC)
 - 2 Pcs for Client Registration
- 3 Barcode Printer (1)
- 4 Barcode Reader (1)
- 5 Barcode Label (2)
- 6 Camera (2)
- 7 Inverter 5Kva
- 8 Battery 1200V 200AmPh

Software

1. 1 no of NewGenLib Networking/Enterprise Version Installation

Project Activities / Phases

The following PHASES/ activities were outlined for the success of the project:

Phase 1:

- a. Installation, Configuration and Customization of Automation/Digital Library Software (New Generation in Library Automation & Networking)
- b. Hands on training of library staff

Phase 2: Library cataloguing system/conversion of retrospective card catalogue (Technical processing module. This module has following option such as a Import Bibliographic data, From other libraries' OPACs, Primary y or Original Cataloging, Provides 3 different templates for Cataloging: Simple, General and M ARC21 Tem plates, Compliant to MARC21 for Bibliographic.

Phase 3: Creation of On-line Public Access Catalogue (OPAC)

Phase 4: House-keeping operations

Phase 5: Hands on Training of Staff

However, the full implementation and operation of the NewGenLib software is being done by library staff, though at present it is only the cataloguing and classification unit that has been able to fully implement the software in their routine activities. It is interesting to state that data entry for the library's cataloguing records was done by the staff of the cataloguing department. The practice of relying on library's own staff has helped KUST library gained experience and control over their automation system /project.

Presently, the software has not been fully adopted in the various departments of the library. The library started with the cataloguing and classification units under the Technical Service Department. The staff in this unit were taken through how the cataloguing module of the software works and they have been able to upload close to 3000 bibliographic records of her information resources into the Online Public Access Catalogue using the cataloguing module of the software. Some of the bibliographic elements available on the cataloguing module for data entering includes: title(subtitle), statement of responsibility, main author, joint author, ISBN, edition, name of publisher, place of publication, year of publication, subject, call number, series statement, note and pagination.

The software provides for checking of related names during data entering to avoid duplication of efforts and also it uses accession number as the primary key. It also provides for modifying of records already available on the database when there is a need for that.

METHODOLOGY

The survey research design was used and the population size was 5 professional and para professional staff of the cataloguing unit of the library. The instrument for data collection was questionnaire and all the respondents filled and returned the questionnaire which were used for data analysis.

DATA ANALYSIS AND INTERPRETATION

Table 1

Reasons for Adoption of NewGenLib in KUST Library

S/N	ITEMS	SA	A	D	SD	TOTAL(%)
1	Provision of on-the-spot access to information	3(60%)	2(40%)	0	0	5(100%)
2	Proper organization of information resources	5(100%)	0	0	0	5(100%)
3	Accurate charging and discharging process	4(80%)	1(20%)	0	0	5(100%)
4	Up to date statistical records	2(40%)	3(60%)	0	0	5(100%)
5	Evaluation of information resources	2(40%)	2(40%)	1(20%)	0	5(100%)
6	Linkage to all the faculty libraries for efficient management and adequate services to the users.	5(100%)	0	0	0	5(100%)
7	Resource sharing	4(80%)	1(20%)	0	0	5(100%)

SA: Strongly Agree, A: Agree, D: Disagree, SD: Strongly Disagree

Table 1 reveals that 3(60%) respondents strongly agreed that the reason for the adoption of NewGenLib software is that it helps to Provide on-the-spot access to information while 2(40%) respondents agree that the reason for the adoption of the software is because of the Provision of on-the-spot access to information; 5(100%) respondents strongly agree that the reason for the adoption of NewGenLib software is that it helps for Proper organization of information resources; 4(80%) respondents strongly agree that the reason for the adoption of NewGenLib software is that it helps for accurate charging and discharging process while 1(20%) respondent agree that the reason for the adoption of the software is because it helps for accurate charging and discharging process; 2(40%) respondents strongly agree that the reason for the adoption of NewGenLib software is that it helps to provide up to date statistical records while 3(60%) respondents agree

that the reason for the adoption of the software is because it helps to provide up to date statistical records; 2(40%) respondents strongly agreed that the reason for the adoption of NewGenLib software is that it helps for evaluation of information resources, 2(40%) respondents agreed that the reason for the adoption of NewGenLib software is that it helps for evaluation of information resources, while 1(20%) respondent disagree that NewGenLib software helps for the evaluation of information resources; 5(100%) respondents strongly agreed that the reason for the adoption of NewGenLib software is its ability to help create linkage to all the faculty libraries for efficient management and adequate services to the users; 4(80%) respondents strongly agreed that the reason for the adoption of NewGenLib software is that it helps for resource sharing while 1(20%) respondent agreed that the reason for the adoption of the software is because it helps for resource sharing.

Table 2

ICT Facilities Available for the Adoption of NewGenLib Software

S/N	ITEMS	YES	NO	TOTAL
1	Server	5(100%)	0	5(100%)
2	Computers	5(100%)	0	5(100%)
3	Barcode Printer	5(100%)	0	5(100%)
4	Scanning Machine	0	5(100%)	5(100%)
5	Barcode Label	5(100%)	0	5(100%)
6	Camera	5(100%)	0	5(100%)
7	Inverter	0	5(100%)	5(100%)
8	Battery	5(100%)	0	5(100%)
9	Computer printers	5(100%)	0	5(100%)
10	Internet	5(100%)	0	5(100%)
11	Projector	0	5(100%)	5(100%)
12	Barcode Reader	5(100%)	0	5(100%)
13	UPS	5(100%)	0	5(100%)
14	Photocopy Machine	5(100%)	0	5(100%)

Table 2 shows the available ICT facilities for the adoption of NewGenLib software in KUST library. The following ICT facilities are available server 5(100%), computers 5(100%), barcode printer 5(100%), barcode label 5(100%), camera 5(100%), battery 5(100%), computer printers 5(100%), internet 5(100%), barcode reader 5(100%) UPS 5(100%) and photocopy

machine 5(100%). While scanning machine 5(100%), inverter 5(100%), and projector 5(100%) are not available for the adoption of NewGenLib software in KUST library.

Table 3

Challenges faced in the adoption of NewGenLib software

S/N	ITEMS	SA	A	D	SD	TOTAL
1	Erratic power supply	5(100%)	0	0	0	5(100%)
2	Insufficient manpower	5(100%)	0	0	0	5(100%)
3	Lack of supervision	5(100%)	0	0	0	5(100%)
4	Training and technical support	5(100%)	0	0	0	5(100%)
5	Lack of participation	5(100%)	0	0	0	5(100%)
6	Lack of motivation from the management	5(100%)	0	0	0	5(100%)
7	Inability to modify some of the fields	5(100%)	0	0	0	5(100%)
8	Accession number field not available on the interface where other fields are	5(100%)	0	0	0	5(100%)
9	Scalability and speed	5(100%)	0	0	0	5(100%)

Table 3 shows that all the respondents strongly agreed that erratic power supply, insufficient manpower, lack of supervision, training and technical support, lack of participation, lack of motivation from the management, inability to modify some of the fields and accession number field not available on the interface where other fields are, and scalability and speed were the major challenges faced in the adoption of NewGenLib software.

Table 4

Strategies for Solving the Challenges

S/N	ITEMS	SA	A	D	SD	TOTAL
1	Provision of private generating set that will be available whenever there is power outage from the main source of the University	5(100%)	0	0	0	5(100%)
2	Librarians should be sent for training on ILMS skills	5(100%)	0	0	0	5(100%)
3	There should be an enhanced technical collaboration between the library and the ICT unit of the University	5(100%)	0	0	0	5(100%)
4	Library should organize seminars and workshops to train the library staff on the use of NewGenLib Integrated Library Management Software	5(100%)	0	0	0	5(100%)
5	Library staff should be motivated to embrace the software	5(100%)	0	0	0	5(100%)

Table 4 shows the response of the respondents on the strategies to tackle the challenges faced in the adoption of NewGenLib software in KUST library. The findings shows that none of the respondents disagreed with the strategies to improve the adoption of the software.

DISCUSSION OF FINDINGS

From the findings, it was discovered that the main reasons for the adoption of NewGenLib ILMS by KUST library were: provision of on-the-spot access to information, proper organization of information resources, accurate charging and discharging process, up to date statistical records, evaluation of information resources, linkage to all the faculty libraries for efficient management and adequate services to the users and resource sharing. This supported the claim of .Muller (2011) when he stated that “integrated library systems (ILS) are multifunction, adaptable software applications that allow libraries to manage, catalog and circulate their materials to patrons”.

The findings also show that the ICT facilities available in the adoption of NewGenLib Software in KUST library include: server, computers, barcode printer, barcode label, camera, battery, computer printers, internet, barcode reader, UPS and photocopy machine. While scanning machine, inverter, projector are not available.

The major challenges faced in the adoption of NewGenLib ILMS in KUST library are: erratic power supply, insufficient manpower, inadequate training and technical support, lack of participation, inability to modify some of the fields, accession number field not available on the

interface where other fields are, scalability and speed, lack of supervision, lack of motivation from the management. This corroborate the assertion of Forrester (2007) when he undertook an in-depth study of how open source software is being used in North America and Europe to understand its role in IT and examine the barriers and benefits that open source software represents to enterprise customers. The biggest concern was the inability to find ‘technical support’.

However, some of the strategies to solve the challenges as agreed by the respondents includes: provision of private generating set that will be available whenever there is power outage from the main source of the University, librarians should be sent for training on ILMS skills, there should be an enhanced technical collaboration between the library and the ICT unit of the University, library should organized seminars and workshops to train the library staff on the use of and the staff should be motivated to use the software.

RECOMMENDATIONS

Based on the findings, the following recommendations were made:

- 1 Librarians and users should be involved in any ILS implementation program;
- 2 University Management should have a positive attitude towards automation of library services;
- 3 Effort be intensified to educate both staff and users of the library on effective use of library software;
- 4 Workshop and seminar attendance be made mandatory for the librarians and technical staff of the Library to be able to fix any minor challenge that may arise while using the software;
- 5 The library should be provided with a private generating set as backup against erratic power supply to ensure the smooth running of the server;
- 6 Proper funding of the automation project.

CONCLUSION

In conclusion, NewGenLib Integrated Library Management Software is an effective software that is recommended for use in libraries trying to adopt open source software for library automation. Kano University of Science and Technology library hopes to adopt the software to the services of other departments in the library after concluding the data entry process. This will enhance service delivery and to provide accurate and timely information to the University community.

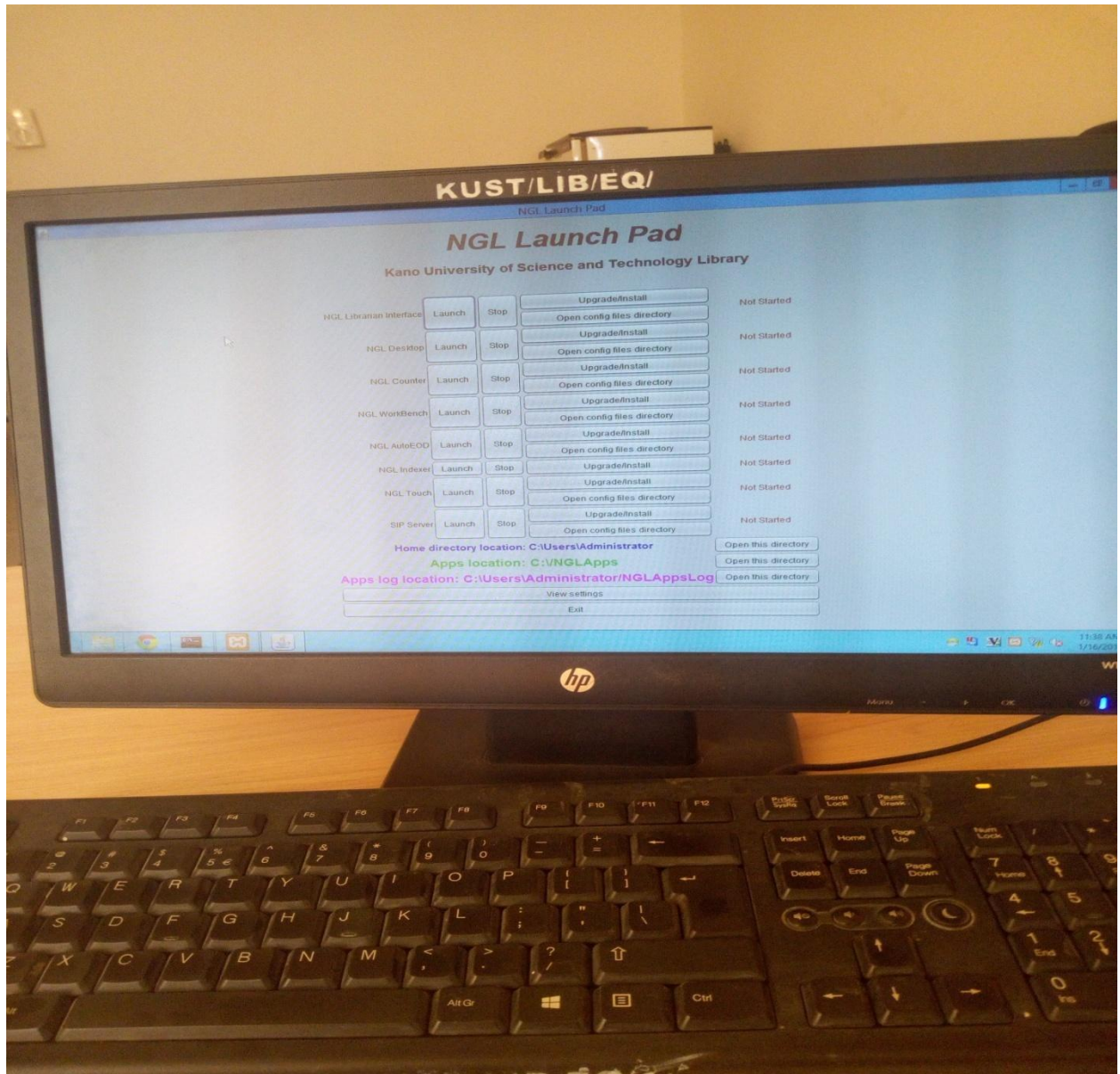


Fig 1: NewGenLib Launch Pad

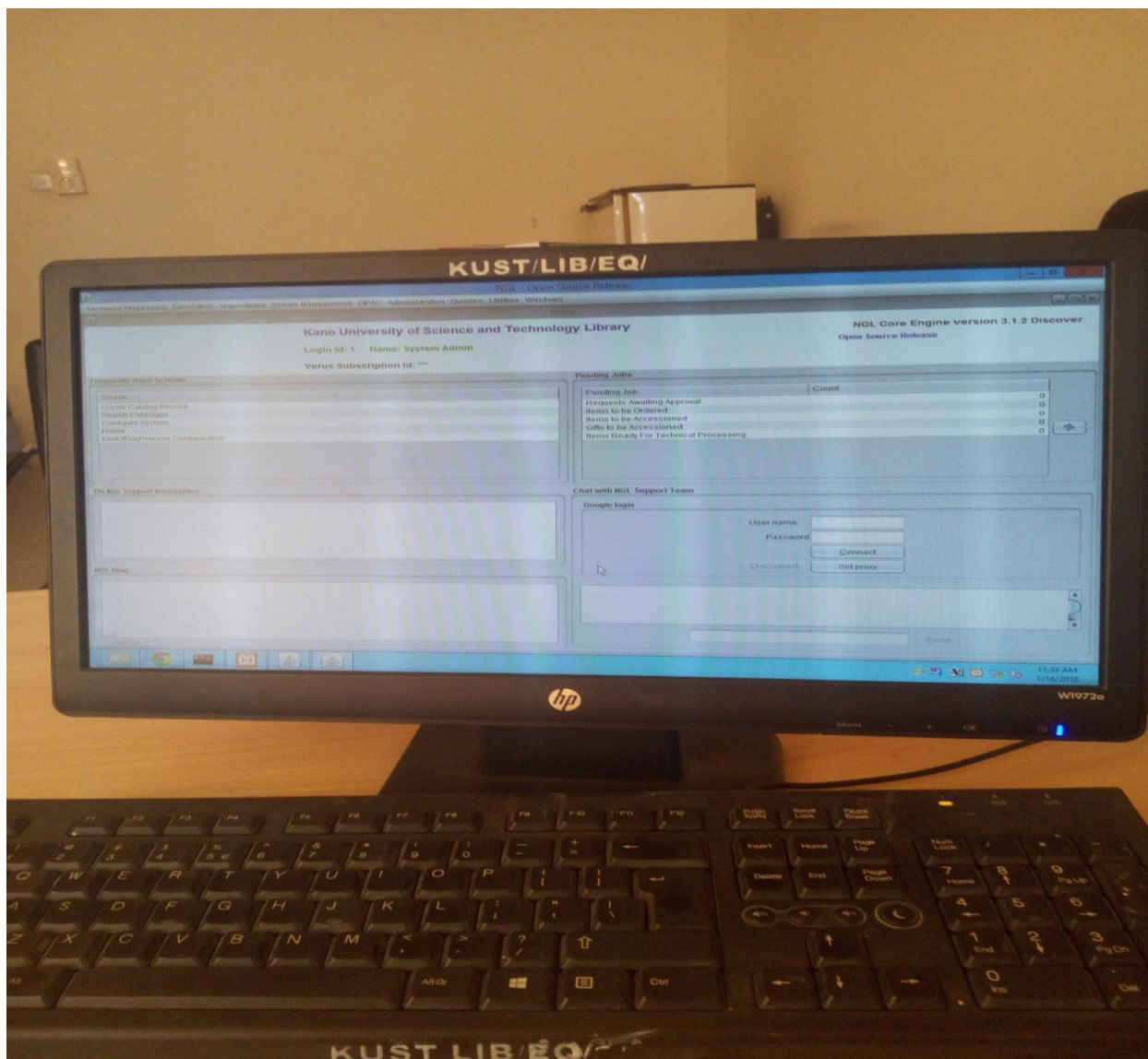


Fig 2: NewGenLib modules

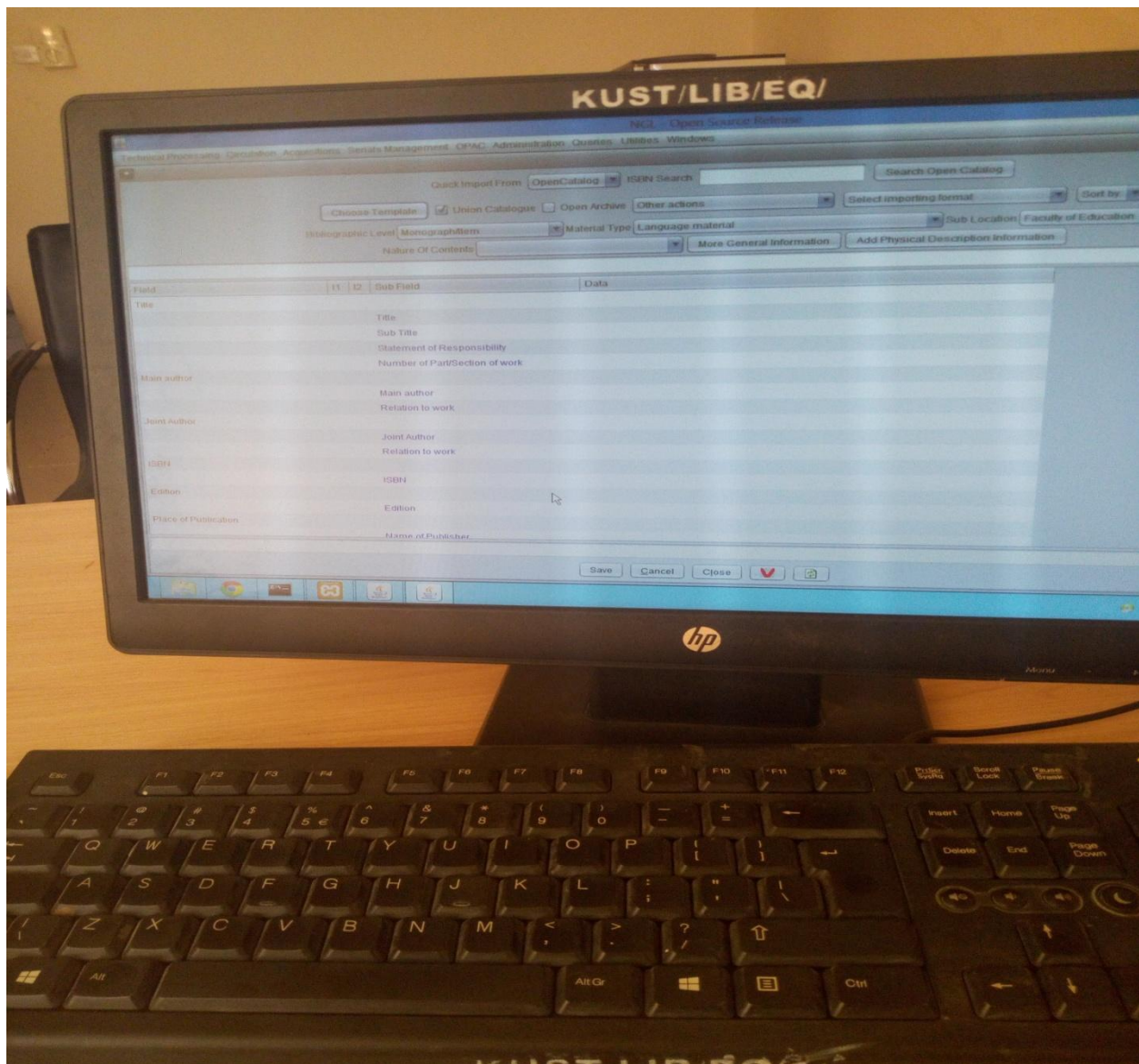


Fig 3: Data entry interface

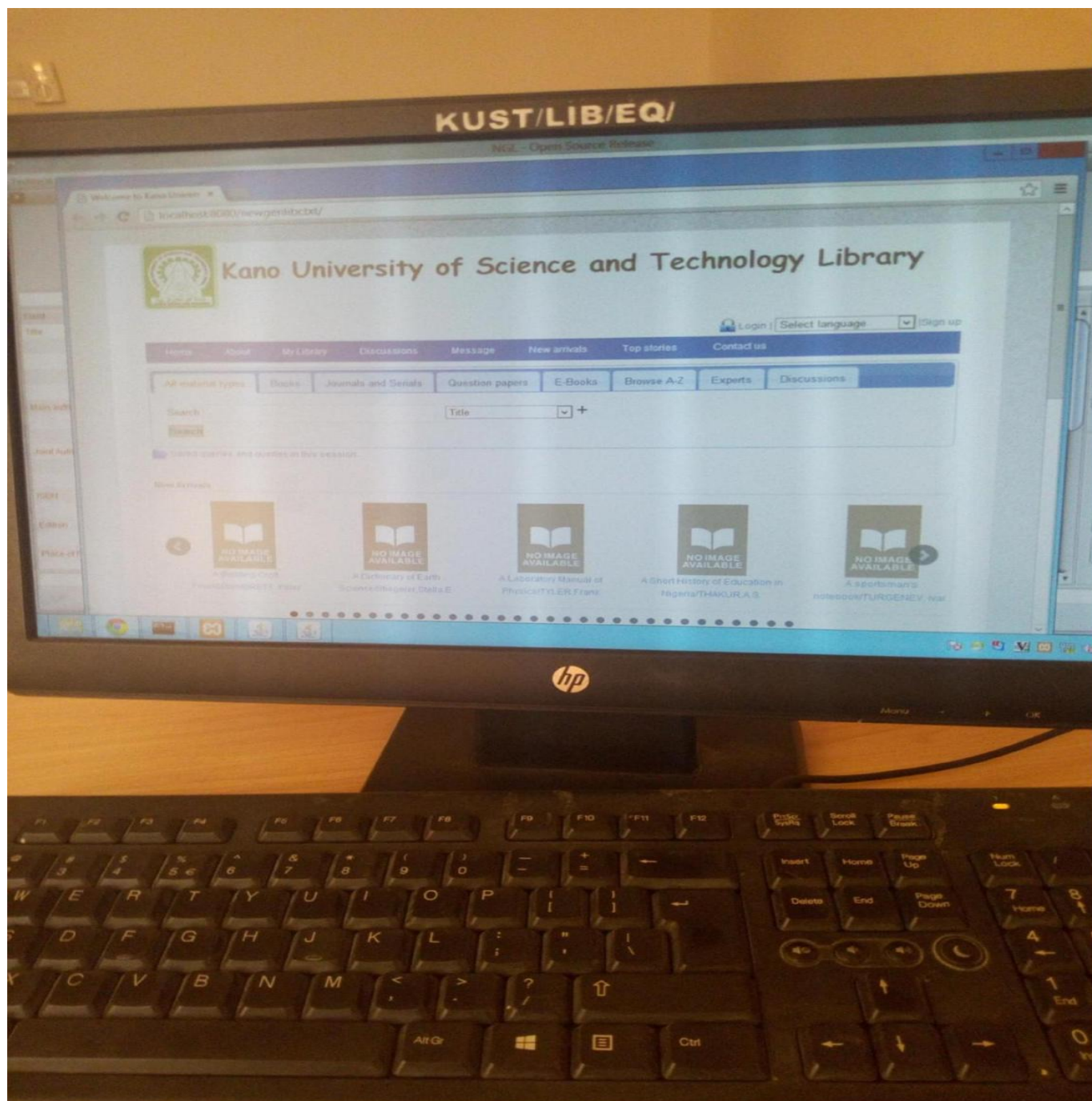


Fig 4: KUST Library Online Public Access Catalogue (OPAC)

REFERENCES

- Bhardwaj, Rajesh Kr. and Shukla, R.K. (2000). A Practical Approach to Library Automation. *Library Progress (International)*, 20 (1).
- Biswas, Goutam and Paul Dibyendu (n.d.). NewGenLib, the first Indian Open Source Software: a Study of Its Features and Comparison with Other Software.
- Forrester Consulting (2007). Open source software's expanding role in the enterprise: Companies adopt open source as standard. MA: Cambridge.
- Kano University of Science and Technology (2017). Student Handbook.
- Khayyum Baba, M.A; Abdul Raheem, Mohd. and Bhasker, L. Vijay (2015). Library Automation by Using Newgenlib Open Source Software : A Case Study of Saiyid Hamid Library (Central Library) in Maulana Azad National Urdu University (Manuu). *Paripex - Indian Journal of Research*, 4(4)
- Mukhopadhyay, Parthasarathy (2010). Managing leader and control fields of Marc21 bibliographic format in FLOSS based LMSS: Benchmarking of Koha and NewGenLib. New Delhi: ESS ESS Publication.
- Muller, T. (2011). How to choose a free and open source integrated library system. *OCLC Sys.Serv: International digital library perspectives*, 27 (1).
- Obajemu, A.S., Osagie, J.N., Akinade, H.O.J., and Ekere, F.C. (2013). Library software products in Nigeria: a survey of uses and assessment. *International Journal of Library and Information Science*, 5(5) <http://www.academicjournals.org/IJLIS>.
- Omeluzor, S.U.; Adara, O.; Ezinwayi, M. Bamidele, I.A. and Umahi, F.O. (2012). Implementation of Koha Integrated Library Management Software (ILMS): The Babcock University Experience. *Canadian Social Science*, 8(4).
- Osaniyi, L. (2010). Evaluating the X-Lib Library Automation System at Babcock University, Nigeria: A Case Study. *Information Development*, 26(1).
- Uzomba, E.C.; Oyebola, O.J. and Izuchukwu, A.C. (2015). The Use and Application of Open Source Integrated Library System in Academic Libraries in Nigeria: Koha Example

